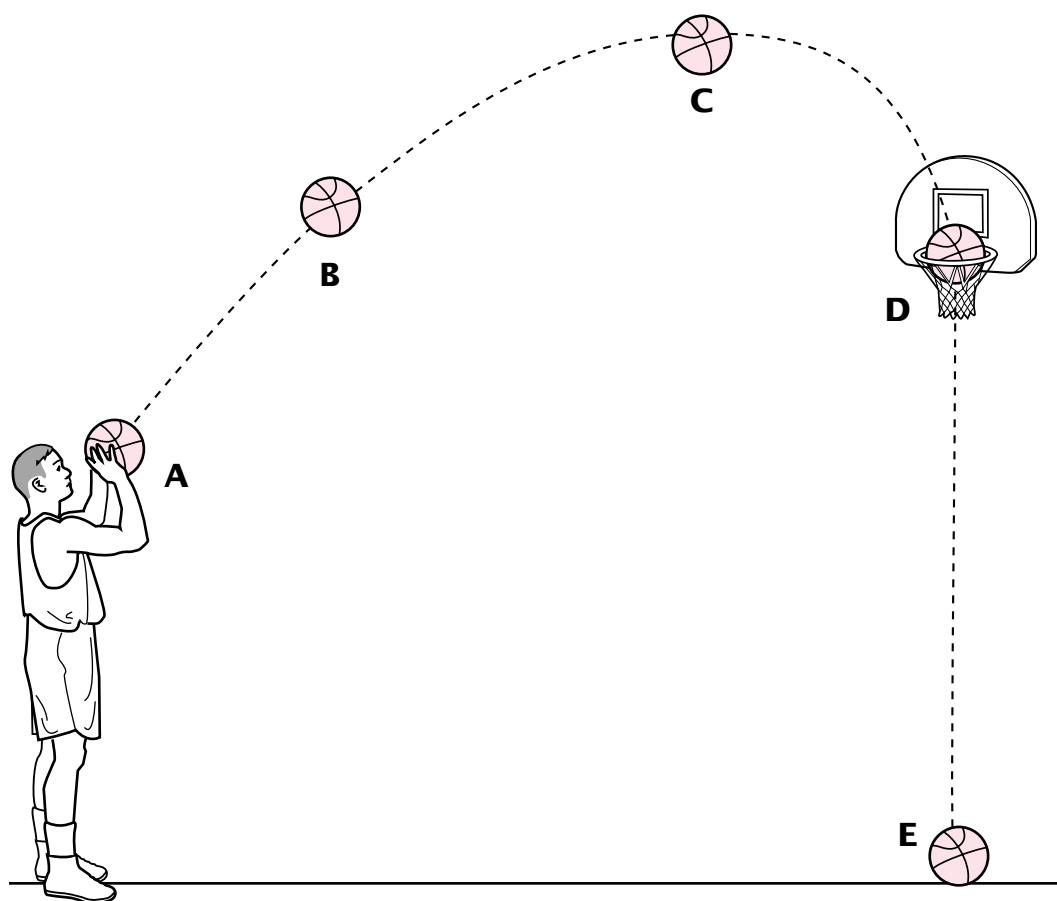


Missouri Assessment Program
Spring 2001

Science

Released Items
Grade 10

- 8** The picture below shows the path of a basketball when a player takes a shot at the basket.



At which point does the ball have the greatest potential energy? _____

Explain your answer.

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Create a diagram of Earth and the moon and label the relative positions at high and low tide. Use the diagram to help explain why the time from low tide to high tide is about 6 hours.

Paint Durability

A paint company decided to test the durability of two new house paints. They compared the two paints to determine which should be marketed as a better, longer-lasting, weather-resistant paint. To evaluate the two paints, the following test was conducted by the company's research division:

Method:

- The first paint was brushed on one side of a new house in February, and after three months, the painted side was photographed and inspected for fading, peeling, or cracking. A description of the first paint was then recorded.
- The second paint was sprayed on the opposite side of the house in August. After three months, the painted side was photographed and inspected for fading, peeling, or cracking. A description of the second paint was then recorded.

The descriptions and photographs of the two experiments were then sent for comparison by a team of experts in the company's quality assurance division.

Results:

Both paints showed no evidence of fading, peeling, or cracking.

Conclusion:

The two paints are equally durable and both should be marketed as better, longer-lasting paints.

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List four weaknesses in this procedure for evaluating and comparing the durability of the two paints and propose a solution for each weakness.

Problem 1. _____

Solution _____

Problem 2. _____

Solution _____

Problem 3. _____

Solution _____

Problem 4. _____

Solution _____

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Automobile accidents are a major concern in the United States. Two possible solutions to the problem are as follows:

1. Place magnets in the highway and computer-linked sensors in the car that will warn drivers when they cross the center line.
2. Place traffic-imaging systems in the car that will transmit images to on-board computers that will monitor and control braking, steering, and acceleration.

Select one solution. # _____

Explain one advantage of that system.

Explain one disadvantage of the system.
